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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,251	01/03/2002	Takaji Numao	1035-359	9405

7590 06/29/2004

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EXAMINER
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NGUYEN, KEVIN M

ART UNIT	PAPER NUMBER
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2674

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DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/034,251

Applicant(s)

NUMAO, TAKAJI

Examiner

Kevin M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-14, 16-19 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-6, 8, 9, 14 and 23 is/are allowed.
- 6) ☒ Claim(s) 7, 11-13, 16-19, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/21/02, 11/10/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The amendment filed on 04/09/2004 is entered. Claims 2-6, 8, 9, 14, 23 are allowed.
2. The indicated allowability of claims 7, 24, 10-13, 25, 16-19 is withdrawn in view of the newly discovered reference(s) to Okumura (US 5,945,972). Rejections based on the newly cited reference(s) follow.

***Allowable Subject Matter***

3. Claims 2-6, 8, 9, 14, 23 are allowed.
4. The following is an examiner's statement of reasons for allowance: the cited prior arts, alone or in combination, do not teach or fairly suggest

“first switching element for each pixel, each first switching element being electrically connected at a first terminal thereof to one of the first wires; and

second switching element for each pixel, each second switching element being electrically connected in series with the memory means and a second terminal of the first switching element,

wherein, for a giving pixel in the display, the second terminal of the corresponding first switching element is electrically connected to the potential maintaining means,” recited in claim 2.

“first switching element for each pixel, each first switching element being electrically connected at a first terminal thereof to one of the first wires and electrically connected at a second terminal thereof to the memory means; and

fourth switching element for each pixel, each fourth switching element being electrically connected at a first terminal thereof to one of the first wire and electrically connected at a second terminal thereof of the potential maintaining means," recited in claim 4.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7, 24, 11-13, 25, 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Okumura et al (US 5,945,972).

As to claim 7, Okumura et al teaches a display comprising referring to eight embodiment, fig. 21, col. 24, lines 15-67

Liquid crystal display cells hereinafter CEL, col. 9, line 33-34, (electro-optic element);

PM 1, PM2 (memory means) and capacitor of CEL (potential maintaining means);

[recited in lines 5-9 of claim 7]

In the display panel on the receiving side, the adder 425 in each pixel adds an image signal stored in a corresponding one of the memory circuits PM1 and PM2 which store the same image signals stored in the memory circuits FM1 and FM2, respectively, and the difference signal externally transferred to recover the image signal. The selection

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between the memory circuits PM1 and PM2 is made by the select signal driver 418 through the second memory selector 422, the select signal driver receiving the select signal from the fourth memory selector 402. If the recovered signal is background, the contents of a background memory are updated (fig. 21, col. 24, lines 56-67).

Thus, the display data is weighted between two memories PM1 and PM2 as claimed.

As to claim 24, Okumura et al teaches fig. 1A is a schematic illustration of a conventional LCD device, col. 8, lines 11-12, across the cell CEL is supplied a voltage corresponding to the difference between an applied potential from the corresponding pixel signal line and the potential of a common power supply VCOM (col. 9, lines 42-46).

As to claims 11, 16, Okumura et al teaches referring to fig. 3, liquid crystal display cells hereinafter CEL, col. 9, line 33-34, (electro-optic element);

PM 1, PM2 (memory means) and capacitor of CEL (potential maintaining means);

The first and second memories 121a and 121b of each cell receive an image signal over one of the image signal lines Lb1 to Lbn that corresponds to the column for that cell and hold it. The rewrite control of the memories is performed by the rewrite director 124 (col. 13, lines 39-43).

Thus, second memory means (121b), provided outside the pixel area (CEL), for recording a signal from which the electro-optic elements produce a display as claimed.

As to claims 12, 13, 17, 18, Okumura et al teaches the first and second memories 121a and 121b of each cell receive an image signal over one of the image

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signal lines Lb1 to Lbn that corresponds to the column for that cell and hold it. The rewrite control of the memories is performed by the rewrite director 124 (col. 13, lines 39-43) by switching (selector 125, fig. 3) between multiple video images (memories 1-m, 121a-121m, fig. 5).

As to claim 25, Okumura et al teaches fig. 1A is a schematic illustration of a conventional LCD device, col. 8, lines 11-12, across the cell CEL is supplied a voltage corresponding to the difference between an applied potential from the corresponding pixel signal line and the potential of a common power supply VCOM (col. 9, lines 42-46).

7. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Akiyama (US 5,952,991).

As to claim 10, Akiyama teaches a display comprising referring to fig. 1A, 2A, col. 5, lines 29-32, and lines 48-57,

a liquid crystal layer 105 (electro-optic element, fig. 2A), a memory portion (fig. 1A),

a display operation by the electro-optic elements (liquid crystal layer 105) is controlled using outputs from the memory means (capacitor C2, fig. 2A) and the potential maintaining means (capacitor C1, fig. 2A),

at least one transistor Tr2, 107 (sixth switching element fig. 2A) interposed between the potential maintaining means (said capacitor C1, fig. 2A) and Vac (power source wire, fig. 2A).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al in view of Troutman (US 6,157,357).

As to claim 19, Okumura et al teaches the invention is applicable to any other display device that has pixels arranged in columns and rows such as an EL electroluminescent display (col. 28, lines 6-9).

Okumura et al does not teach organic LED elements.

Troutman teaches an organic LED 108 (fig. 1A, col. 2, lines 20-28).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to substitute each Okumura's EL element including organic LED, in view of the teaching in the Troutman's reference because this would improve the quality of the image being displayed without visual artifacts if they exist as taught by Troutman (col. 3, lines 45-46).

**Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen  
Patent Examiner  
Art Unit 2674

KN  
June 20, 2004

  
XIAO WU  
PRIMARY EXAMINER